

MINI-EY-SERIES

PRECISION GROOVING SYSTEM



Mplus...

MINI-EY-IC

WITH INTERNAL COOLANT

The new advanced Mini-EY-IC series with internal coolant supply provides a positive step in usability. The improved coolant supply reduces heat generation as well as enabling longer tool life. Optimised chip control and higher cutting parameters, plus increased wear resistance means greater efficiencies can be achieved.

PRODUCT RANGE

- Insert width: 2 - 3
- Holder size: 12/16/20
- Hand: R / L
- Max. cut off diameter: \varnothing 25/32/42

APPLICATION

- External grooving

FEATURES

- Higher cutting parameters
- Cost effective double sided inserts
- Sizes 12 & 16 with clamping screw axis tilted at 115° for easy, on machine access
- Internal coolant supply



LONGER TOOL LIFE

EXCELLENT SURFACES

IMPROVED CHIP CONTROL

INCREASED WEAR RESISTANCE

plus...

WITH INTERNAL COOLANT



MINI-EY

WITH EXTERNAL COOLANT

The Mini-EY is designed for swiss-type lathes as a precision grooving system. A range of suitable insert grades and chipbreakers makes it usable for steels, stainless steels, cast irons and difficult-to-cut materials. Complete with economical double sided inserts.

PRODUCT RANGE

- Insert width: 1.5 - 3
- Holder size: 10/12/16
- Hand: R / L
- Max. cut off diameter: \varnothing 25/32

APPLICATION

- External grooving

FEATURES

- Cost effective double sided Inserts
- Designed for swiss-type lathes



LONG TOOL LIFE

GOOD SURFACE FINISHES

EXCELLENT CHIP CONTROL

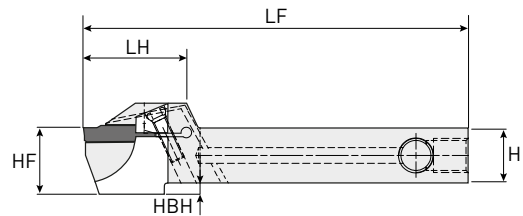
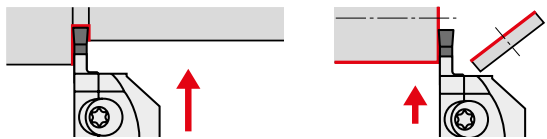
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MINI-EY-IC

WITH INTERNAL COOLANT SUPPLY

00° type mono block holder

Insert	GY2M	-GS	Insert	GY2M	-GS
		-GM			-GM
Insert	GY2M	-GU	Insert	GY2M	-GU
Insert	GY2G	-MF	Insert	GY2M	R/L
					-GM



Right hand tool holder shown.

Order Number	Seat Size	CW	(R/L)	Stock	CDX*	CUTDIA*	H	B	LF	LH	HF	HBH
EYHL1212D125-IC	D	2.0	L	●	12.5	25	12	12	110	30	16	4
EYHR1212D125-IC			R	●	12.5	25	12	12	110	30	16	4
EYHL1212F125-IC	F	3.0	L	●	12.5	25	12	12	110	30	16	4
EYHR1212F125-IC			R	●	12.5	25	12	12	110	30	16	4
EYHL1616D160-IC	D	2.0	L	●	16.0	32	16	16	110	33.5	16	—
EYHR1616D160-IC			R	●	16.0	32	16	16	110	33.5	16	—
EYHL1616F160-IC	F	3.0	L	●	16.0	32	16	16	110	33.5	16	—
EYHR1616F160-IC			R	●	16.0	32	16	16	110	33.5	16	—
EYHL2020F210-IC			L	●	21.0	42	20	20	125	37	20	—
EYHR2020F210-IC			R	●	21.0	42	20	20	125	37	20	—

1. When using insert widths 2.39mm and 2.50mm with E type seat sizes, in F type holders, the centre height will differ.

*1 Dimensions shown are when the gauge insert is used.

If other insert geometries are used then LF, LH and HF values may vary.

*2 Size 12 Holder without socket.

*3 Sizes 12 & 16 with clamping screw axis tilted at 115° for easy on machine access.



CW = Insert Width (mm)
 (R/L) = Hand
 CDX = Max. Groove Depth (mm)
 CUTDIA = Max. Cut Off Diameter (mm)

MINI-EY-IC

CUTTING MODE AND INSERTS

Holder Number	Cutting Mode (Right hand holder shown)	Insert Geometry / Insert Number	
EYH○1212D125-IC			
EYH○1212F125-IC		GY2M0300D020N-GU GY2M0200D020N-GU	
EYH○1616D160-IC		GY2M0200D020N-GS GY2M0300D020N-GS	
EYH○1616F160-IC		GY2M0200D020N-GM GY2M0300D020N-GM	
EYH○2020F210-IC		GY2M0200D020R05-GM GY2M0200D020L05-GM GY2M0300D020R05-GM GY2M0300D020L05-GM	 (Gauge insert)

1. ○ = R/L

SPARE PARTS

Holder Number	 Clamp Screw	 Wrench	 Plug	 Adaptor
EYH○1212D125-IC			Plug-M08-100-05	—
EYH○1212F125-IC				
EYH○1616D160-IC	TS406 (Clamp Torque: 3.5 Nm)	TKY15R		
EYH○1616F160-IC			Plug-G1/8-05	Socket-G1/8
EYH○2020F210-IC				

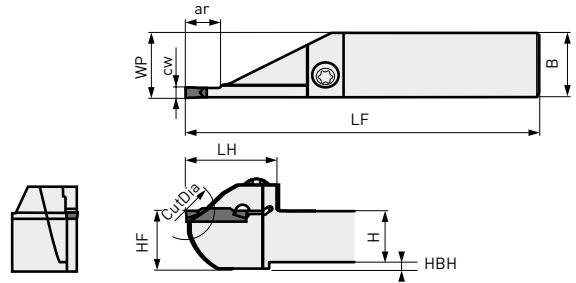
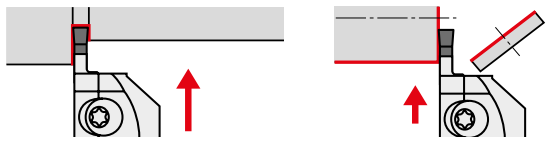
1. Wrench : z : Clamp Screw
2. ○ = R/L

MINI-EY

WITH EXTERNAL COOLANT SUPPLY

00° type mono block holder

Insert	GY2M○○○○○○○○○○	-GS	Insert	GY2M○○○○○○○○○○	-GS
		-GM			-GM
Insert	GY2M○○○○○○○○○○	-GU	Insert	GY2M○○○○○○○○○○	-GU
Insert	GY2G○○○○○○○○○○	-MF	Insert	GY2M○○○○○○R/L○○	-GM



Right hand tool holder shown.

Order Number	Seat Size	CW	(R/L)	Stock	CDX*	CUTDIA*	H	B	LF	LH	HF	HBH
EYHR1212C125	C	1.5	R	●	12.5	25	12	12	110	20	16	4
EYHL1212C125			L	●	12.5	25	12	12	110	20	16	4
EYHR1010D125	D	2.0	R	●	12.5	25	10	10	110	20	14	4
EYHL1010D125			L	●	12.5	25	10	10	110	20	14	4
EYHR1212D125	D	2.0	R	●	12.5	25	12	12	110	20	16	4
EYHL1212D125			L	●	12.5	25	12	12	110	20	16	4
EYHR1212F125	F	3.0	R	●	12.5	25	12	12	110	20	16	4
EYHL1212F125			L	●	12.5	25	12	12	110	20	16	4
EYHR1616C135	C	1.5	R	●	13.5	27	16	16	110	22	20	—
EYHL1616C135			L	●	13.5	27	16	16	110	22	20	—
EYHR1616D160	D	2.0	R	●	16	32	16	16	110	22	16	—
EYHL1616D160			L	●	16	32	16	16	110	22	16	—
EYHR1616F160	F	3.0	R	●	16	32	16	16	110	22	16	—
EYHL1616F160			L	●	16	32	16	16	110	22	16	—

1. When using insert widths 2.39mm and 2.50mm with E type seat sizes, in F type holders, the centre height will differ.
 * Dimensions shown are when the gauge insert is used. If other insert geometries are used then LF, LH and HF values may vary.



CW = Insert Width (mm)
 (R/L) = Hand
 CDX = Max. Groove Depth (mm)
 CUTDIA = Max. Cut Off Diameter (mm)

MINI-EY

CUTTING MODE AND INSERTS

Holder Number	Cutting Mode (Right hand tool holder shown)	Insert Geometry / Insert Number
EYH [○] 1212C125		
EYH [○] 1616C135		
EYH [○] 1010D125		
EYH [○] 1212D125		
EYH [○] 1616D160		
EYH [○] 1212F125		
EYH [○] 1616F160		

1. ○ = R/L

SPARE PARTS

Holder Number	Clamp Screw	Wrench
EYH [○] 1212C125	 TS406 (Clamp Torque: 3.5 Nm)	 TKY15R
EYH [○] 1616C135		
EYH [○] 1010D125		
EYH [○] 1212D125		
EYH [○] 1616D160		
EYH [○] 1212F125		
EYH [○] 1616F160		

1. Wrench : z : Clamp Screw

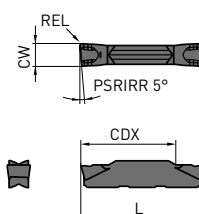
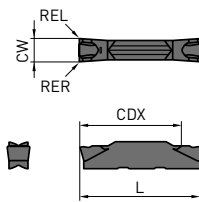
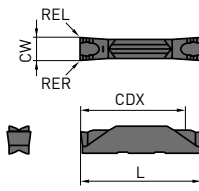
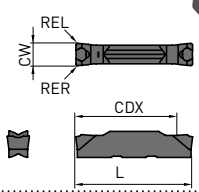
2. ○ = R/L

GY INSERTS

Order Number	VP10RT	VP20RT	MY5015	NX2525	Seat Size	Grooving Width	Tolerance	Re	CDX	L	Geometry
GY2M0200D020N-GU	●	●	●	●	D	2.00	±0.03	0.2	19.7	20.70	GU Breaker (For gummy steel)
GY2M0239E020N-GU	●	●	●	●	E	2.39	±0.03	0.2	19.8	20.70	
GY2M0250E020N-GU	●	●	●	●	E	2.50	±0.03	0.2	19.5	20.70	
GY2M0300F030N-GU	●	●	●	●	F	3.00	±0.03	0.3	19.3	20.70	
GY2M0318F030N-GU	●	●	●	●	F	3.18	±0.03	0.3	19.3	20.70	
GY2M0150C010N-GS	●	●	●	●	C	1.50	±0.03	0.1	13.4	14.70	GS Breaker (Low feeds)
GY2M0200D020N-GS	●	●	●	●	D	2.00	±0.03	0.2	18.7	20.70	
GY2M0239E020N-GS	●	●	●	●	E	2.39	±0.03	0.2	18.5	20.70	
GY2M0250E020N-GS	●	●	●	●	E	2.50	±0.03	0.2	18.5	20.70	
GY2M0300F020N-GS	●	●	●	●	F	3.00	±0.03	0.2	18.5	20.70	
GY2M0318F020N-GS	●	●	●	●	F	3.18	±0.03	0.2	18.5	20.70	
GY2M0150C020N-GM	●	●	●	●	C	1.50	±0.03	0.2	13.9	14.70	GM Breaker (Medium feeds)
GY2M0200D020N-GM	●	●	●	●	D	2.00	±0.03	0.2	19.4	20.70	
GY2M0239E020N-GM	●	●	●	●	E	2.39	±0.03	0.2	19.4	20.70	
GY2M0250E020N-GM	●	●	●	●	E	2.50	±0.03	0.2	19.4	20.70	
GY2M0300F030N-GM	●	●	●	●	F	3.00	±0.03	0.3	19.4	20.70	
GY2M0318F030N-GM	●	●	●	●	F	3.18	±0.03	0.3	19.4	20.70	
GY2M0200D020R05-GM	●	●	●	●	D	2.00	±0.03	0.2	19.5	20.80	R/L05-GM Breaker
GY2M0200D020L05-GM	●	●	●	●	D	2.00	±0.03	0.2	19.5	20.80	
GY2M0250E020R05-GM	●	●	●	●	E	2.50	±0.03	0.2	19.5	20.825	
GY2M0250E020L05-GM	●	●	●	●	E	2.50	±0.03	0.2	19.5	20.825	
GY2M0300F030R05-GM	●	●	●	●	F	3.00	±0.03	0.3	19.5	20.85	
GY2M0300F030L05-GM	●	●	●	●	F	3.00	±0.03	0.3	19.5	20.85	

FOR GROOVING / CUTTING OFF

FOR CUTTING OFF



Right hand insert shown.

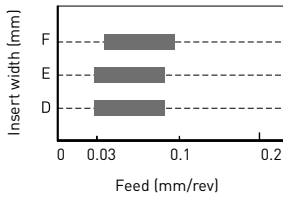
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RECOMMENDED CUTTING CONDITIONS

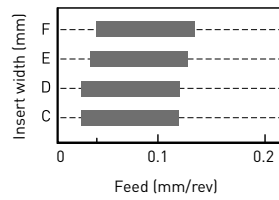
GU Breaker

Grooving, Cutting off



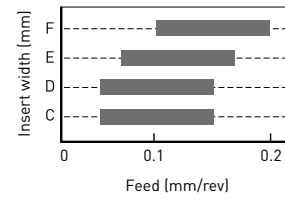
GS Breaker

Grooving, Cutting off



GM Breaker

Grooving, Cutting off



■ : 1st recommended area

Seat Size	C	D	E	F
Insert Width (mm)	1.50	2.00	2.39	3.00
	—	2.24	2.50	3.18
	—	—	2.74	3.24

RECOMMENDED CUTTING SPEED (M/MIN)

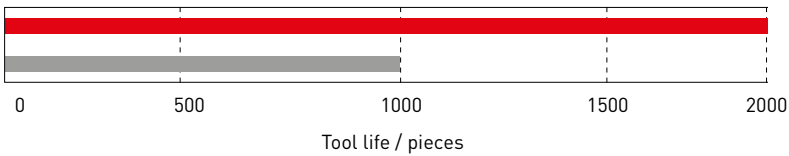
Material	Hardness	Grade	Vc (m/min)							
			0	50	100	150	200	250	300	
P Mild Steel Carbon Steel Alloy Steel	<160 HB	VP20RT			100		220			
		VP10RT			110		230			
		MY5015			140		300			
		NX2525		90		210				
	160-280 HB	VP20RT		80		180				
		VP10RT		90		190				
		MY5015		110		250				
		NX2525		70		170				
	>280 HB	VP20RT		60		140				
		VP10RT		70		150				
		MY5015		90		210				
		NX2525		55		135				
M Stainless Steel	<270 HB	VP20RT		60		140				
		VP10RT		70		150				
K Gray Cast Iron Ductile Cast Iron	Tensile Strength <300MPa	VP20RT		80		180				
		VP10RT		90		190				
		MY5015		140		300				
	Tensile Strength <800MPa	VP20RT		60		140				
		VP10RT		70		150				
		MY5015		90		210				
S Heat Resistant Alloy Titanium Alloy	—	VP20RT	30	60						
		VP10RT	40	70						

1. VP20RT is the first recommended grade for materials other than hardened steel.
2. For VP10RT, VP20RT and MY5015, wet cutting is recommended.

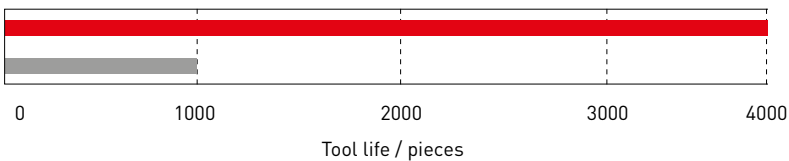
MINI-EY-IC

APPLICATION EXAMPLE

Material	1.4021
Tool	GY2G0300F020N-MF VP20RT
Cutting Speed Vc (m/min)	160
Feed f (mm/rev)	0.22
Cutting Mode	Semi finishing
Coolant	Internal coolant
Machine	Multi Spindle Machine MS32
Results	Tool life was doubled compared to the conventional tool.



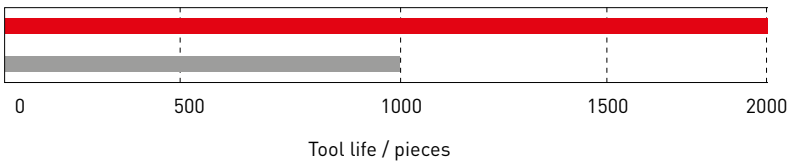
Material	1.4021
Tool	GY2G0300F020N-MF VP20RT
Cutting Speed Vc (m/min)	160
Feed f (mm/rev)	0.18
	0.07
Cutting Mode	Finish cutting
Coolant	Internal coolant
Machine	Multi Spindle Machine MS32
Results	Tool life was 4 times longer than the conventional tool.



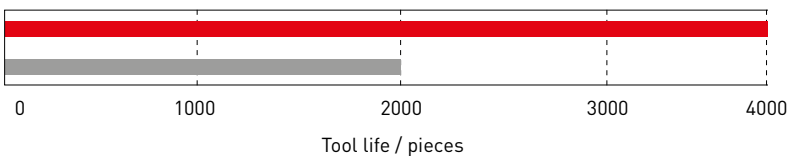
MINI-EY-IC

APPLICATION EXAMPLE

Material	1.4305
Tool	GY2M0200D020N-GM VP20RT
Cutting Speed Vc (m/min)	160
Feed f (mm/rev)	0.08
	0.04
Cutting Mode	Cutting off
Coolant	Internal coolant
Machine	Swiss Type Machine
Results	Tool life was doubled compared to the conventional tool.



Material	1.4305
Tool	GY2M0200D020N-GM VP20RT
Cutting Speed Vc (m/min)	120
Feed f (mm/rev)	0.08
	0.04
Cutting Mode	Cutting off
Coolant	Internal coolant
Machine	Swiss Type Machine
Results	Tool life was doubled compared to the conventional tool.





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